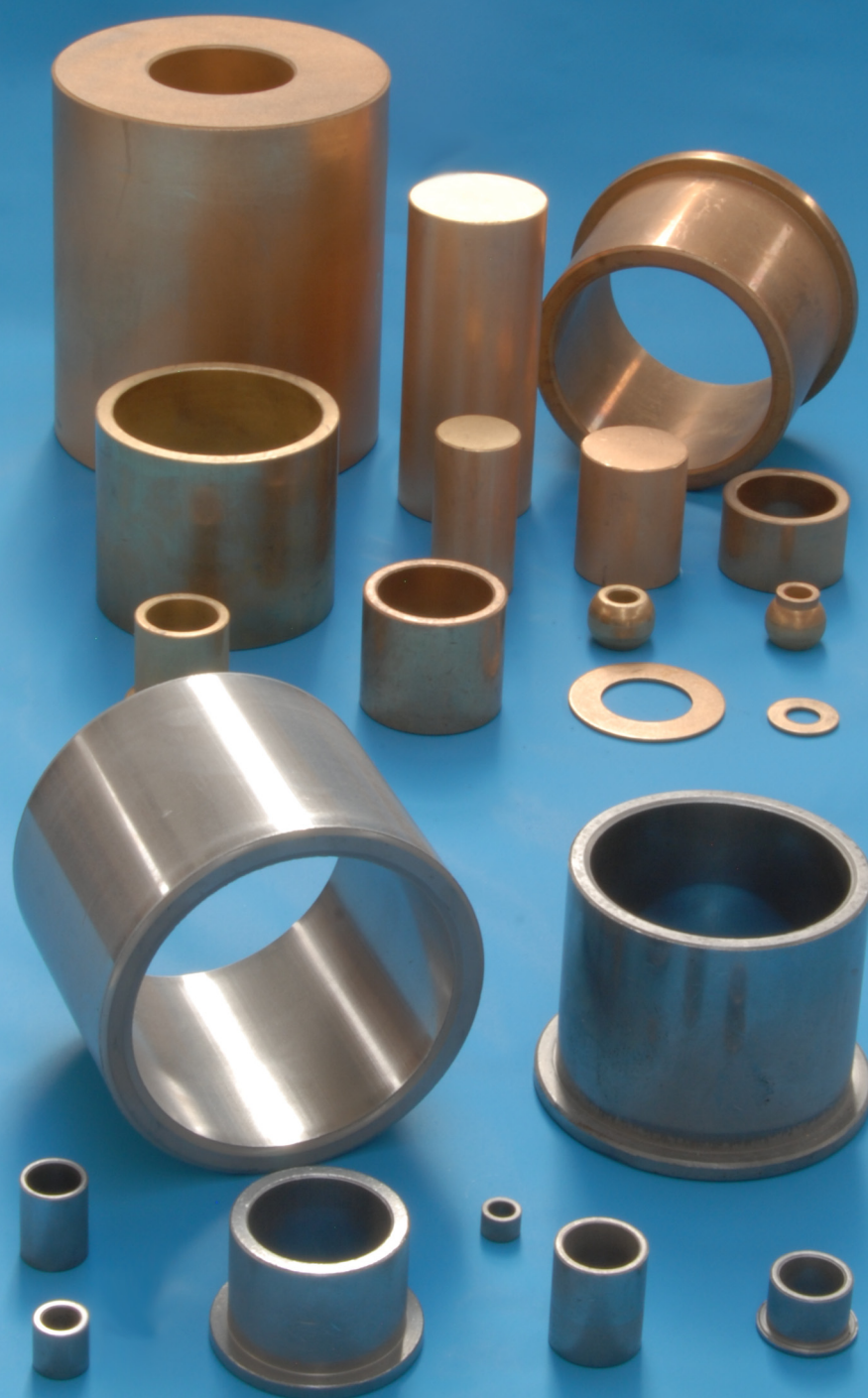


SINTER-OIL[®]

SELF-LUBRICATING SINTERED BEARINGS



MATERIALS

Self-lubricating bearings **SINTER-OIL®** are produced from sintered metal powder. After sintering, the bearings are immersed in a hot oil bath, allowing the oil to penetrate the porous structure of the bronze part. The standard oil used to impregnate the bearings complies with ISO 100 specifications, with a viscosity of 5.7 – 8.3 °E at 50 °C and a maximum operating temperature of 100 °C.

These bushings are manufactured using either **bronze** or **iron** powder.

MATERIAL PROPERTIES

	Bronze	Iron
Density [gr/cm ³]	6,5	5,8
Porosity [%]	18-22	18-22
Maximum speed [m/s]	6	4
Maximum static load [Kp/cm ²]	200	500
Hardness [HB]	25	25
Tensile strength [N/mm ²]	80	70
Elongation [%]	2	3

PERFORMANCE VALUES

Material	PV [Kp/cm ² · m/s]
Bronze	18
Iron	13

TEMPERATURE

The operating temperature ranges from **-20°C** to **100°C**. These limits can be modified by using a different oil than the standard one, or by adding additives such as molybdenum disulfide (MoS₂) in special production runs.

APPLICATIONS

- Electric motors
- Speed reducers
- Gearboxes
- Printing machinery
- Textile industry equipment

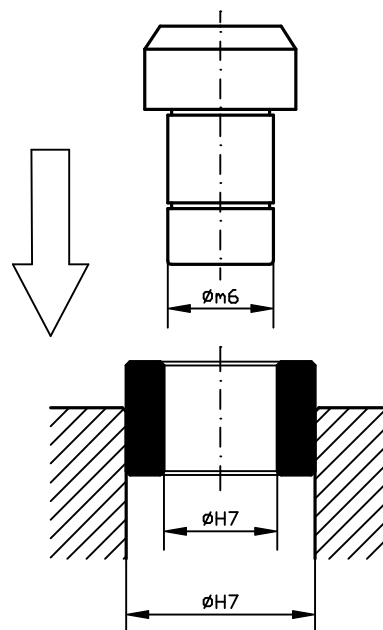
EQUIVALENT SPECIFICATIONS

	Bronze	Iron
AFNOR	FU-E10-62	FC10-U3-56
SINT	Sint A50/A51	Sint A00
ASTM	B438 1 II	B439-3
MET	BP25	FP20

TOLERANCES

The dimensions and tolerances of all these bearings comply with **ISO 2795 (DIN 1850 Part 3)**.

FITTING



EXAMPLE CALCULATION

Maximum permissible radial force for the bronze bearing A-20-26-25, at 1,500 rpm. :

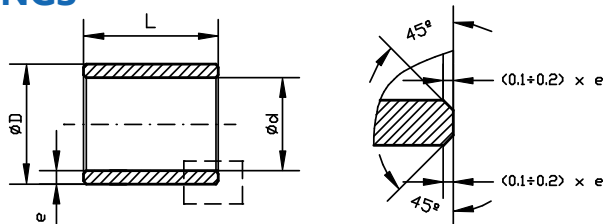
$$V = \frac{\pi \cdot Di \cdot N}{60 \cdot 10^3} = \frac{\pi \cdot 20 \cdot 1500}{60 \cdot 10^3} = 1,57 \text{ m/s}$$

$$P \cdot V = 18 \quad P = 18 / 1,57 = 11.46 \text{ Kp/cm}^2$$

$$P = F / S \quad F = S \cdot P = Di \cdot L \cdot P = 2 \cdot 2.5 \cdot 11.46$$

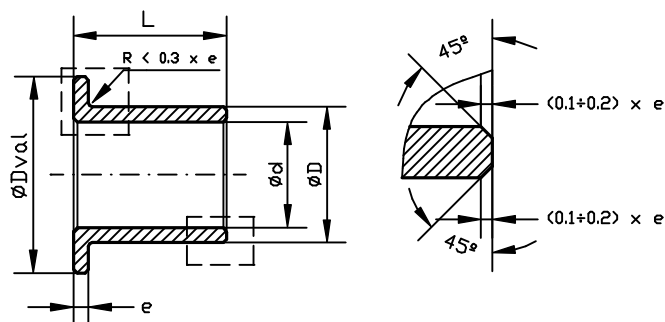
$$F = 57.3 \text{ Kp}$$

V: speed, Di: inner diameter, L: length, N: rpm, P: load, F: force



Code	ϕd	ϕD	Length (L)									
A	22	29	18	22	28	36						
A		30	30									
A		32	20	22	25	30	35					
A	25	30	20	25	30	32	35	40				
A		32	20	25	30	32	35	40	45			
A		35	25	30	35	40	45	50				
A	26	30	25	30								
A	28	32	20	22	25	28	32	35	36	40	45	
A		33	20	22	25	28	32	36	40	45		
A		35	20	25	30	35	40	45	50			
A		36	22	25	28	35	36	45				
A	30	35	20	25	30	35	40	45	50	52		
A		38	20	24	25	30	35	38	40	45	50	
A		40	20	25	30	35	40	45	50			
A	32	38	20	25	32	40	50					
A		40	20	25	30	32	35	40	45	50		
A	35	40	20	25	30	35	40	45	50			
A		41	25	35	40							
A		44	22	28	35							
A		45	25	30	35	40	45	50	60			
A	36	42	22	28	36	45						
A		45	22	28	36	45						
A	38	44	25	35	45							
A	40	45	30	35	40	45	50					
A		46	25	30	32	35	37	40	45	50		
A		50	25	32	40	45	50	60				
A	45	51	28	36	45	56						
A		55	30	35	40	45	50	55	60	65		
A		56	28	36	45	56						
A		60	40	45	50	55	60					
A		65	80									
A	50	56	32	40	45	50	63					
A		60	32	40	45	50	60	63	70	100		
A		70	70									
A	55	65	40	55	60	70						
A	55	70	70									
A	60	68	50	60	70							
A		70	50	60	90	120						
A		72	50	60	70							
A		75	60	90								
A		80	90	120								
A	63	85	90									
A		70	40	50								
A	65	75	60	90								
A		80	60	90								
A	70	80	50	60	90	120						
A	70	85	60	90								
A	75	85	60	70	90	100						
A		90	70	100								
A		100	100									
A	80	90	70	100								
A	80	95	70	100								
A	80	100	80	120								
A	80	105	100									
A	85	95	100									
A	85	100	100									
A	90	105	80									
A	90	110	80									
A	100	120	80	120								

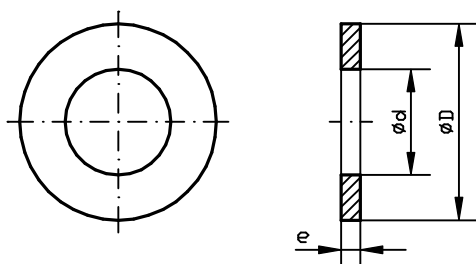
BRONZE FLANGED BEARINGS



Code	ϕd	ϕD	ϕD_{val}	e	Length (L)									
B	3	6	9	1,5	4	5	6	10						
B	4	8	12	2	4	5	8	10	12					
B	6	10	14	2	6	10	15	16						
B	8	12	16	2	6	8	10	12	15	16				
B	9	14	19	2,5	6	10	14							
B	10	13	16	1,5	8	10	16	20						
B		14	18	2	10	15	20							
B		15	20	3	10	15	16	20						
B		16	22	3	8	10	16	20						
B	12	15	18	1,5	12	16	20							
B		15	18	2	8	12	16	20						
B		16	18	2	15	20								
B		17	22	2,5	12	16	20	25						
B		17	22	3	10	12	15	16	20	25				
B	14	18	24	3	8	12	20							
B		18	22	2	14	18	20	22	25					
B		20	25	3	10	14	15	18	20	22	25	28	30	
B		20	26	3	14	18	22	28						
B	15	19	23	2	16	20	25							
B		20	25	3	15	20	25	30						
B		21	27	3	16	20	25	32						
B		22	28	3	12	15	16							
B	16	20	24	2	16	20	25							
B		22	28	3	12	15	16	20	25	30	32			
B		22	26	2	18	20	22	25	28					
B	18	24	30	3	18	22	28	30						
B		25	32	4	20	25	30	35						
B		24	28	2	10	16	20	25						
B	20	26	32	3	15	16	20	25	30	32				
B		28	35	4	20	25	30	35						
B	22	27	32	2,5	18	22	28							

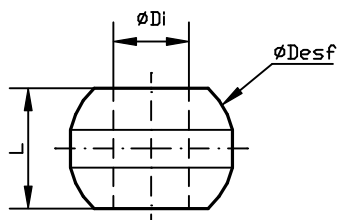
Code	ϕd	ϕD	ϕD_{val}	e	Length (L)									
B	22	28	33	4	15	20	25	30	35	40				
B		28	34	3	15	20	25	30						
B		29	36	3,5	18	22	28	36						
B	25	30	35	2,5	20	25	30	32						
B		32	39	3,5	20	25	32							
B		32	40	4	20	25	30	32	35	40				
B		35	45	5	16	20	25	30						
B	28	33	38	2,5	22	28	36							
B		36	44	4	22	25	28	30	35	36	40			
B	30	35	44	4	30	35	40							
B		38	46	4	20	25	30							
B	30	40	48	4	25	30	35	40						
B	32	38	44	3	20	25	32							
B		40	48	4	20	25	30	32	35	40				
B	35	45	55	5	20	25	30	35	40					
B	36	42	48	3	22	28	30	35	36					
B	36	45	54	4,5	22	28	36							
B	40	46	52	3	25	32	35	40						
B		50	60	5	25	30	32	35	40	50				
B	45	51	57	3	28	36	45							
B		55	65	5	30	35	45							
B		56	67	5,5	28	36	45							
B	50	56	62	3	30	32	40	50						
B		60	70	5	30	32	35	40	50					
B	60	70	80	5	30	40	45	50	60					
B	60	72	84	6	50	60								
B	60	75	85	8	35	60								
B	65	75	85	8	35									
B	70	85	95	6	40	50	60							
B	70	85	95	8	60									
B	80	95	105	8	70									
B	90	110	120	8	50									

BRONZE THRUST WASHERS



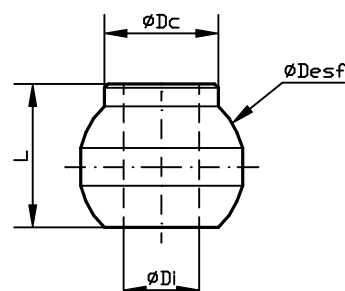
Code	ϕd	ϕD	e
EF	10	20	1,5
EF	14	26	1,5
EF	16	30	1,5
EF	18	32	1,5
EF	20	32	4,5
EF	26	44	1,5
EF	60	75	8,0

SPHERICAL BEARINGS



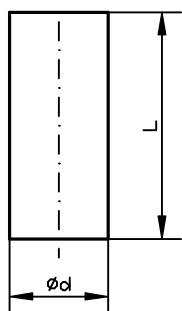
Code	ϕDi	$\phi Desf$	L
C	4	10	8
C	5	12	9
C	6	14	11
C	7	16	12
C	8	18	13
C	9	20	14,5
C	10	22	16
C	12	20	14
C	12	23	16

SPHERICAL COLLAR BEARINGS



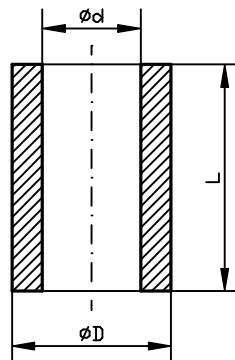
Code	ϕDi	$\phi Desf$	ϕDc	L
D	4	10	6	10
D	5	12	8	11
D	6	14	9	13
D	7	13	10	12
D	8	18	12,5	16
D	9	20	14	17
D	10	19	14,5	16
D	10	22	15	18
D	12	23	17,5	18

BRONZE SOLID BARS



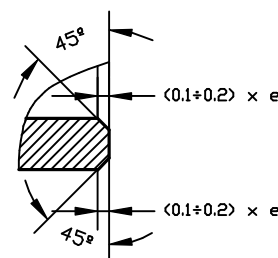
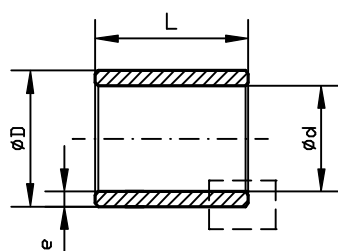
Code	ϕd	L
TB	15	30
TB	20	25
TB	20	50
TB	25	25
TB	25	50
TB	30	35
TB	30	40
TB	30	50
TB	32	40
TB	32	80
TB	42	50
TB	42	100
TB	45	90
TB	52	60
TB	52	120
TB	62	120
TB	70	120
TB	72	60
TB	80	120
TB	105	120
TB	125	80
TB	125	140
TB	149	80
TB	149	140
TB	178	140
TB	202	80

BRONZE CORED BARS



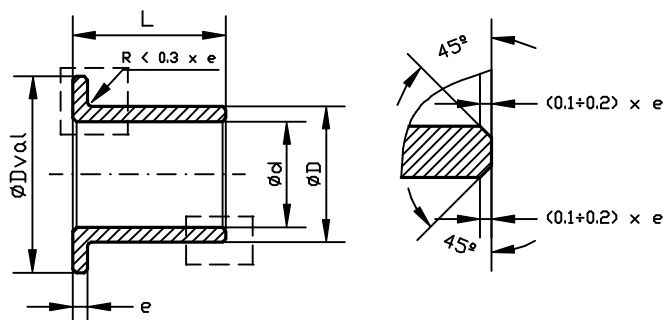
Code	ϕd	ϕD	L
TD	38	66	65
TD	38	66	120
TD	45	105	120
TD	53	85	65
TD	53	85	120
TD	59	125	80
TD	59	125	140
TD	68	100	70
TD	68	104	65
TD	68	104	120
TD	79	149	80
TD	79	149	140
TD	83	123	65
TD	83	123	120
TD	98	142	65
TD	98	142	120
TD	110	178	80
TD	110	178	140
TD	150	202	140

IRON PLAIN BEARINGS



Code	ød	øD	Length (L)					
HA	3	6	4	10				
HA	4	7	7					
HA		8	8	12				
HA	5	8	8					
HA	6	9	6	10	12	16		
HA		10	6	10	16			
HA		12	6	10	12	16		
HA	8	11	8	12	16	20		
HA		12	8	12	16	20		
HA		14	8	12	16	20		
HA	9	12	10	14				
HA		14	14					
HA	10	13	10	12	16	20	25	
HA		14	10	14	15	16	20	25
HA		15	10	16	20	25		
HA		16	10	16	20	25		
HA		20	24					
HA	12	14	12	15				
HA		15	12	16	20	25		
HA		16	12	15	16	20	25	
HA		17	12	16	20			
HA		18	12	25				
HA	14	16	15					
HA		18	14	18	22	28		
HA		20	14	18	22	28		
HA		22	28					
HA	15	17	15					
HA		19	16	20				
HA		21	16	25	32			
HA	16	20	16	20	25	32		
HA		22	16	20	25	32		
HA	18	20	20					
HA		22	18	22	28	36		
HA		24	18	22	28	36		
HA		25	18	22	28	36		
HA	20	23	20					
HA		24	16	20	25	32		
HA		25	16	20	25			
HA		26	16	20	25	32		
HA		27	16	20	25	32		
HA		28	16	20	25	32		

Code	ød	øD	Length (L)					
HA	22	25	25					
HA		27	7	18	22	28	36	
HA		28	16	18	22	28	36	
HA	25	29	28	36				
HA		30	25					
HA		28	25					
HA	28	30	20	25	32	40		
HA		32	20	25	32	40		
HA		32	9	22	28	36	45	
HA	30	33	22	28	36	45		
HA		36	22	28	36	45		
HA		34	15	30				
HA	32	35	30					
HA		36	10					
HA		38	24	30	38			
HA	35	38	20	25	32	40	50	
HA		40	18	20	25	32	40	
HA		44	22	28	35			
HA	36	45	25	30	35	40	50	
HA		42	22	28	36	45		
HA		45	22	28	36			
HA	40	44	16	25	35	45		
HA		46	25	32	40			
HA		50	25	32	40	50		
HA	45	51	25	28	45			
HA		55	35	45	65			
HA		56	36	45	56			
HA	50	56	40	50	63			
HA		60	32	40	45	50	63	
HA		65	55					
HA	60	65	60					
HA		70	50	55	60	90		
HA		72	50	60	70			
HA	80	70	40	50				
HA		100	50	80	120			
HA	100	120	95	120				



Code	φd	φD	φDval	e	Length(L)									
HB	6	10	14	2	6	10								
HB	8	12	16	2	8	12	16							
HB	10	12	14	1	17									
HB	10	13	16	1,5	10	12	16							
HB	10	15	20	2,5	10	16	20							
HB	10	16	22	3	10	16								
HB	12	15	18	1,5	12	16	20							
HB	12	16	18	2	20									
HB	12	17	22	2,5	12	16	25							
HB	12	18	24	3	12									
HB	14	18	22	2	14	18	22							
HB	14	20	26	3	14	18	22	28						
HB	15	20	25	3	6									
HB	15	21	27	3	16	25								
HB	16	20	24	2	16	20	25							
HB	16	22	28	3	16	20	25							
HB	18	22	26	2	18	28								
HB	18	24	30	3	18	22	28							
HB	20	24	28	2	10	16	20	25						
HB	20	26	32	3	16	20	25	32						
HB	22	27	32	2,5	18	22	28							
HB	22	28	34	3	6	25	30							
HB	22	28	35	3	6									
HB	22	29	36	3,5	18	22	28	36						
HB	25	30	35	2,5	20	25	32							
HB	25	32	39	2,5	20									
HB	25	32	39	3,5	20	25	32							
HB	28	33	38	2,5	28									
HB	28	36	44	4	22	28	36							
HB	30	38	46	4	20	25	30							
HB	32	38	44	3	20									
HB	32	40	48	4	20	25	30	32						
HB	36	42	48	3	28									
HB	36	45	54	4,5	22	36								
HB	40	46	52	3	25	32	40							
HB	40	50	60	5	25	32	40							
HB	45	56	67	5,5	45									
HB	50	56	62	3	40	50								
HB	50	60	70	5	32	50								
HB	60	70	80	5	50	60								
HB	70	80	90	5	65									



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